1.0 PROJECT DESCRIPTION

Bradford Island is located in the southwest quadrant of Section 22, Township 2 North, Range 7 East, Willamette Meridian, and within the state of Oregon. Bradford Island is part of the Bonneville Lock and Dam, which spans the Columbia River between Oregon and Washington (Figure 1-1). The Bradford Island Landfill is a former waste disposal site, situated on the eastern (upstream) end of Bradford Island.

During hydrographic and underwater dive surveys conducted in October and November 2000, the U.S. Army Corps of Engineers (USACE) identified the presence of waste-related items submerged in the Columbia River, just offshore of the landfill. Some of these items included electrical components that contained polychlorinated bipheynls (PCBs). Most of the identified electrical items were located near three debris piles located in shallow water, along the north and east shorelines of the island. USACE conducted an investigation of the river to help assess the extent and impacts of site-related contaminants. The scope of the investigation was based on Oregon Department of Environmental Quality (DEQ) and United States Fish and Wildlife (USFW) input and included sampling and analysis of water, sediment, and benthic aquatic specimens. PCBs were detected in all matrices. The findings of this investigation are presented in the In-Water Investigation Report, Bradford Island Landfill (URS, 2002a). The in-water debris was removed in February and March, 2002. The removal activities are described in the Technical Memorandum, In-Water Removal Work (URS, 2002b).

This Sampling and Analysis Plan (SAP) consists of a Field Sampling Plan (FSP) in conjunction with the Quality Assurance Project Plan (QAPP). The FSP was prepared in general accordance with Bradford Island Post Removal Sampling project (hereinafter referred to as "post removal sampling") outlined in the Detailed Statement of Work prepared by the USACE for Contract No. DACW57-99-D-0005, Task Order No. 0004. Modification No. 006 (dated June 27, 2002). The FSP provides the detailed scope of work for field activities (e.g., sample groups, sample locations, etc.) and specifies the procedures to be used during the post removal sampling at Bradford Island.

The purpose of this investigation is to establish the nature and extent of contamination remaining in the sediments after the removal of debris and to collect data that may be used in a Level 1 and Level II Ecological and Human Health Risk Assessment.

1.1 SITE LOCATION AND FEATURES

The Bonneville Dam is the most downstream dam within the Columbia-Snake River navigation system that consists of eight locks and dams. The dam is located at 45° 38. 27 N - 121° 56. 31 W. Bonneville Lock and Dam create a 48-mile-long reservoir from the Bonneville Dam upstream to the Dalles Dam. The river at the dam is divided into three channels by two islands, Bradford and Cascade Islands. The tailrace for the first powerhouse forms one channel, the

spillway channel the middle channel, and the tailrace channel for the second powerhouse the third channel (Figure 1-2).

The major features of the dam complex include the spillway, two powerhouses, two navigation locks, and a fish hatchery. The fish hatchery, main office, and navigation lock visitor center are located on the Oregon shore of the Columbia River. A warehouse and automotive garage facility, and navigation lock support facilities are located on Robins Island. The major features on Bradford Island include the visitor center, fish ladders, the service center building, the equipment building, and the sandblast building. A fish ladder is also located on Cascades Island, and a second visitor center is located on the north shore of the Columbia River in Washington State.

The old navigation lock is located adjacent to the first powerhouse and is no longer in use. The upstream side of the old navigation lock consists of an end sill where the lock doors are located that extends from the riverbed to an elevation of 40 feet mean sea level (msl). The current navigation lock is located immediately south of the old navigation lock and has an end sill that extends up to an elevation of 51 feet msl.

The first powerhouse has a flow capacity of approximately 128,000 cubic feet per second (cfs) and a rated power output of 526,700 kilowatts (kW) (USACE, 2000). The second powerhouse has a flow capacity of approximately 160,000 cfs and a rated power output of 558,200 kW (USACE, 2000).

The normal operating range for the Bonneville pool is between 71.5 feet msl elevation and 76.5 feet msl as measured at the dam. The tailwater elevation varies in direct relationship to the river flow from about 7.0 feet msl at 70,000 cfs to 36.3 feet msl at a river flow of 660,000 cfs (USACE, 1998).

An authorized federal navigation channel in this reach of the river is 300 feet wide and 27 feet deep, although the depth is currently maintained at 17 feet (USACE, 1991). Bathymetric surveys conducted by the USACE indicate that the depth of the pool near the Bonneville Dam ranges from a few feet to over 100 feet.

The spillway is a concrete, gravity structure with eighteen 50-foot-wide bays separated by 10-ft-wide piers. The spillway releases are controlled by eighteen 50-foot-wide by 60-ft-high spillway gates. The crest of the spillway is at 24.0 feet msl.

The landfill site is in the northeast corner of Bradford Island and is located within the State of Oregon. The landfill is not currently used as a part of the routine operation of the Bonneville Lock and Dam and is managed long term as a wildlife habitat for geese under the Bonneville Master Plan. The elevation of the ground surface on the east side (upstream side) of Bradford Island ranges from 110 feet msl to 130 feet msl.